

REMARKS

Claims 1, 4, 5, 32, 35, 36, 45, 46, 49, 50, 53 and 54 have been amended, Claims 3 and 34 have been cancelled, new claims 92 and 93 have been added. Thus, claims 1, 2, 4-33, 35-56, 92 and 93 are pending in this application. For at least the following reasons, it is respectfully submitted that this application is in condition for allowance.

Initially, it is noted that although the total number of claims is not changed, the total number of the independent claims have been increased to seven (7) from five (5). Thus, an excess independent claim fee of \$ 400.00 for two excess claims is required. Please charge the necessary fee of \$400.00 to our Deposit Account No. 50-0945.

In the Action, Claims 43, 44 are rejected under 35 U.S.C. 112, first paragraph because it is unclear the location of the gate and what is intended to be described with the phrase "a depth of the gate is lower than the thickness of the resin layer". Claims 43 and 44 have been amended, and the location of the gate is clearly defined in Claim 43, and the phrase mentioned above is rewritten to clearly show Applicant intention. Further, in Claim 44, the shape of the gate is clearly defined. These characteristics are supported by the specification on page 15, line 10 through page 16, line 10m and its corresponding Figure 5, and on page 22, line 12 through line 22 and its corresponding Figure 9. Thus, since the enable

requirement is satisfied, the rejection under 35 U.S.C. 112, first paragraph is no longer applicable. Thus, Claims 43 and 44 should be patentable.

In the Action, Claims 1, 6-28, 32, 37-42 and 45-56 are rejected under 35 U.S.C. 102 (b) as being anticipated by Miyajima. Before responding to this rejection, the amendment of claims is briefly explained. As mentioned above, Claims 1, 4, 5, 32, 35, 36, 45, 46, 49, 50, 53 and 54 are amended, and Claims 92 and 93 are added.

The amended claim 1 includes all limitations of cancelled claim 3;

the amended claim 4 includes all limitations of the old claim 1;

Claim 5 is amended because claim 3 is cancelled so that the dependency of the amended claim 5 is changed;

the amended claim 32 includes all limitations of the old claim 34;

the amended claim 35 includes all limitations of the old claim 32;

Claim 36 is amended because claim 34 is cancelled so that the dependency of the amended claim 36 is changed;

the amended claims 45, 46 are amended to make the location and condition of a shock absorber clear;

the amended claims 49, 50, 53 and 54 are amended to make the function of a second shock absorber clear; and

Claims 92 and 93 depends from claim 4 and claim 35, respectively, and both have a limitation that the uneven surface is formed by an electric discharging process in coarse condition.

First, the invention defined in independent claims 1 and 32 relates to a sealing apparatus for sealing a semiconductor wafer having semiconductor elements on its surface by resin. The characteristic of the invention claimed in claims 1 and 32 is,

- (a) a lower mold having a first area where the semiconductor wafer is to be mounted, wherein the lower mold has an uneven surface, which is formed within a second area, which is in the first area, and wherein the uneven surface is not formed in the periphery of the first area.

As described in the specification on page 10 lines 8-15, according to the structure described above, if the uneven surface exists under the periphery of the semiconductor wafer 201, large force may be focused on the periphery of the semiconductor wafer 201. As a result, the force in the range between a few tons and a few decades of tons is applied to the sealing device 100.

However, Miyajima does not disclose this characteristic at all. The device disclosed in Miyajima includes a lower die 20 having an area enclosed by sucking holes 76a. The surface in the area is mat-finished to form fine projections. As shown in Fig. 17, it is clear that the area enclosed by the sucking holes 76a is much larger than an area where a semiconductor wafer is placed. Thus, the fine projections are arranged under the peripheral area of semiconductor wafer when the semiconductor wafer is sandwiched between the upper and lower dies.

Therefore, since Miyajima does not disclose or suggest the claimed sealing apparatus having the characteristic (a) described above, claims 1 and 32 clearly are not anticipated by Miyajima, and is deemed to be clearly patentable over Miyajima, and the rejection of claims 1 and 32 accordingly should be withdrawn.

Further, claims 6-28, and 37-42 depend from claim 1 or claim 32 directly or indirectly. Since Applicants believes that claims 1 and 32 includes a patentable subject matter, the rejection of claims 6-28, and 37-42 depended from claim 1 or claim 32 should be withdrawn. Further, Although claims 2, 5, 33 and 36 are not rejected by Miyajima, these claims depend from claim 1 or claim 32 so that these claim should not be rejected or objected.

As to Claim 46-56, the characteristic of the invention claimed in claims 1 and 46 is,

(b) a shock absorber buffering stress to the semiconductor wafer, wherein a part of the shock absorber is exposed in the area where the semiconductor wafer is to be mounted.

As described in the specification on page 11 lines 9-22, according to the structure described above, in addition to buffering stress applied to the semiconductor wafer, the shock absorber serves to adapt to the varieties of the thickness of each of the semiconductor wafers because it is located in the area where the semiconductor wafer is to be mounted.

However, Miyajima does not disclose this characteristic at all. As the examiner suggested, the shock absorbers 78 are disclosed in Figs. 13-15. However, none of the shock absorbers 78 is exposed in the area where the semiconductor wafer is to be mounted. Since the shock absorbers 78 disclosed in Miyajima is not exposed in the area where the semiconductor wafer is to be mounted, none of them serves to adapt to the varieties of the thickness of each of the semiconductor wafers.

Therefore, since Miyajima does not disclose or suggest the claimed sealing apparatus having the characteristic (b) described above, claims 45 and 46 clearly are not anticipated by Miyajima, and is deemed to be clearly patentable over Miyajima, and the rejection of claims 45 and 46 accordingly should be withdrawn.

Further, claims 47-56 depend from claim 45 or claim 46 directly or indirectly. Since Applicants believes that claims 45 and 46 includes a patentable subject matter, the rejection of claims 47-56 depended from claim 45 and 46 should be withdrawn.

In the Action, Claims 29-31 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Miyajima in view of Yamamoto. Claims 29-31 are dependent claims, each of which depends from Claim 1 indirectly. Thus, these claim includes all limitation of Claim1. As described above, Miyamoto does not disclose the characteristic (a) described above.

As to Yamamoto, it simply discloses a mold device for resin sealing. However, Yamamoto does not disclose a characteristic (a) described above at all.

Further, when a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references. See, *In re Geiger*, 815 F.2d 686, 688 (Fed.Cir.1987). Moreover, three possible source for motivation to combine references are; (1) nature of problem to be solved, (2) the teachings of the prior art, and (3) knowledge of person of ordinary skill in the art. See also *In re Rouffet*, 149 F.3d 1350, 1357(Fed.Cir.1987). Yamamoto discloses that a lead frame on which a semiconductor chips is mounted is sealed by resin, not that a semiconductor wafer is sealed. Thus, since

the nature of the problem to be solved at least is not identical between Miyajima and Yamamoto, these references cannot be combined.

Accordingly, neither Miyajima nor Yamamoto suggest or disclose the characteristic described above, claims 29-31 clearly are not obvious over Miyajima in view of Yamamoto, and is deemed to be clearly patentable over them, and the rejection of claims 29-31 accordingly should be withdrawn.


As to Claims 4 and 35, and new claims 92 and 93, these claims are not rejected. But, for the future examination, the difference between the reference and claims are explained below.

The characteristic of the invention claimed in claims 4 and 35 includes that the uneven surface has a roughness in a range between $8\mu\text{m}$ and $12\mu\text{m}$. According to this structural characteristic, it is possible to avoid making any damage to a semiconductor wafer, and to avoid adhering a semiconductor wafer to the mold.

However, Miyajima does not disclose or suggest any size of the fine projection. Yamamoto does not disclose any uneven surface. Accordingly, neither Miyajima nor Yamamoto suggest or disclose that the uneven surface has a roughness in a range between $8\mu\text{m}$ and $12\mu\text{m}$, claims 4 and 35 clearly are not obvious over Miyajima and Yamamoto, and is deemed to be clearly patentable over them. Newly added claims 92 and 93 depend from claims 4 and 35, respectively so that new claims 92 and 93 should also be patentable.

In view of the foregoing, the application is deemed to be in condition for allowance and such is earnestly solicited. Should any fee be needed, please charge it to our Account No. 50-0945 and notify us accordingly.

Respectfully submitted,



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